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## ABSTRACT

This manual presents concepts, tools, and techniques that are useful in the management of cooperative education programs at the state department of education, school district, and secondary school levels. Section I is a general discussion of the management role in cooperative education. In section II focus is on the nature of the internal and external environments and the impact of forces in the environment on management. Section III discusses management information, including objectives, techniques, and processes for gathering and using information to guide management activities. Section IV addresses planning to reach cooperative education goals and objectives and controlling to keep activities on course. Section V on human relations addresses working with advisory committee members, school staff, employers, students, parents, and others to achieve cooperative education goals and objectives. Discussion in section VI focuses on directing operations, namely directing activities, scheduling, allocating and using resources, assigning, monitoring, and reporting. Section VII is on evaluation. Concluding each section is a set of questions in each management area, which serves as a checklist to guide management activities and as a basis for self-evaluation. Section VIII is an annotated list of sources of additional information. A force-field analysis is appended. (YLB)

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Managing Cooperative Education

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## Managing Cooperative Education

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## MANAGING COOPERATIVE EDUCATION

### INTRODUCTION

This manual presents concepts, tools and techniques which are useful in the management of cooperative education programs at the state department of education, school district and secondary school levels. While objectives, programs and activities at these three levels are not identical, relevant management theory and good practice are, in general, the same for all three. We will note when program and other differences indicate a need for significantly different management emphasis and approaches. As far as possible we will not duplicate information in manuals on administration issued by state departments of education.

In the course of our study of exemplary cooperative education programs, fifty key elements of cooperative education programs were identified. Our manual "Keys to Effective Cooperative Education" discusses 28 of these in some detail. The effectiveness of every element is affected in some way by the nature and quality of overall management. Several key elements are included in this guide. To some extent, the manual and guide both overlap and complement each other. However, we have not included the key element "administration" in "Keys to Effective Cooperative Education" as this guide covers the topic more thoroughly than the entry in the other manual would.

Many state departments of education issue "Administrative Manuals." The following is representative of the contents of the better administration manuals provided by state departments of education for districts and schools:

Introduction: Description of cooperative education, types of cooperative education, benefits and values, job of the coordinator, how to go about initiating a program.

Objectives: Specific and general objectives of cooperative education programs, planning program objectives and instructional objectives.

Cooperative Education Guidelines: for coordinator, students, related class instruction, training stations and working hours.

Legal Responsibilities: working papers, wages, labor laws, taxes, hours, exemptions, social security, unemployment insurance, workers' compensation, travel, safety, etc.

Selection of Training Stations: a check list of criteria to be met and information to be obtained, standard training agreement, training plan, inspection checklist, and report format.

Related Class: curriculum, teaching, and facility guides.

Supervision of Students: on the job and by coordinator.

Vocational Clubs: descriptions of national clubs, local chapters, and nature and benefits of participation.

Advisory Committees: role, organization, selection, invitation, length of service, meetings, committees, relationships with administration and coordinator, and assessing committee effectiveness.

Public Relations: guidelines and evaluation.

While the information and the advice provided in these administrative manuals are important, they generally do not deal with management in the sense that we are using the term. We assume that the technical and legal materials contained in these manuals are known. At any rate, the state departments of education are better prepared and in a more authoritative position to provide educational and legal guidelines than we are. We are more concerned with showing how to use generally applicable principles and practices of good management in directing or consulting with operators of a cooperative education program.

This guide includes:

- descriptions of the management role of administrators and teacher/coordinators;

- discussion and instruction dealing with management principles, concepts, techniques and processes applied to cooperative education;
- charts showing relationships between program objectives and management activities;
- a set of questions in each management area to serve as a checklist to guide management activities as a basis for self-evaluation.

The guide is in 8 sections:

Section I - Management: a general discussion of the management role in cooperative education.

Section II - The Environment: the nature of the internal and external environments and the impact of forces in the environment on management.

Section III - Management Information: objectives, techniques, and processes for gathering and using information to guide management activities.

Section IV - Planning and controlling: deciding what to do to reach cooperative education goals and objectives and taking actions to keep activities on course.

Section V - Human Relations: working with advisory committee members, school staff, employers, students, parents, and others to achieve cooperative education goals and objectives.

Section VI - Directing Operations: directing activities, scheduling, allocating and using resources, assigning, monitoring, reporting, etc.

Section VII - Evaluation: gathering and analyzing information to learn how to do it better and more efficiently next time.

Section VIII - Additional Sources: where to look and learn more about management.

### SECTION I - MANAGEMENT

A question that must be answered before you invest any of your time is, "Is it worthwhile to invest some of my time (of which I have little to spare, considering all the things I have to do) in reading material on how to improve management of cooperative education?" This is not an idle question as many administrators and teacher/coordinators do not believe that improved management would lead to better cooperative education. They point to problems and barriers to improving cooperative education which they claim are more important than improved management. Some of these are:

1. "We don't have the resources and time to do a better job."

While most programs are underfunded and too much is expected of many teacher/coordinators, availability of resources is usually not the major barrier to improvement. Claims of underfunding are usually accompanied by failure to define clear, attainable objectives. And in cases where objectives are appropriate and understood, there is frequently no defined set of intermediate objectives, i.e., strategy leading to primary objectives. There are no guides for action. Time, energy and resources are lost "going in several directions at once" and by inappropriate allocation of scarce resources. Further, many overlook resources outside of the school system. There are sources for resources other than the school system. We found many employers willing to provide additional resources and give of their time, who were never asked to help. We found no situations where proper planning and use of time couldn't increase productive time by at least 10 percent. Delegating and involving others such as other

school staff members, advisory committee members, employers and sometimes students and parents could not only reduce the demands on administrators' and teacher/coordinators' time but would also strengthen the support for cooperative education.

2. "It has nothing to do with management. It's the situation that makes it all pointless: Only the students who don't need help can be placed. The others are not acceptable to employers. The child labor laws make it impossible to place students. Employers are concerned about worker compensation. Etc."

The arguments indicate failure to analyze and develop plans to deal with the external environment. Most people below the top level in school systems are not as dependent on people outside of the educational system for program success as people involved in cooperative education. Responding properly to the external environment is not easy. But no one ever claimed that administering cooperative education is easier than classroom teaching or administering an in-school program. However, it does have the advantage that all students are volunteers and success does lead to employment, clear proof of the value of education.

These arguments also point to the failure of the administrator or teacher/coordinator to be prepared to respond to common employers' excuses for not participating. Child labor laws and insurance requirements do not remain barriers in most cases if the claims are examined, analyzed, and discussed. Proper management would have answers long before the teacher/coordinator goes to visit a prospective employer.

It is a management role to get the people outside to understand and accept the needs and policies of cooperative education.

3. "It's the bureaucracy. The school system is too inflexible to meet employers' needs."

Many school districts and schools have developed work schedules to meet employers' requirements and State Departments of Education have gone along. Identification of specific employer's needs, development of alternatives and schedules, involvement of the appropriate decision makers in the school and at the work place, can lead to success. This is a management problem of getting the educational system to adapt to environmental needs.

4. "I'm not a manager. I'm an educator."

Most professionals who move to management positions continue to think of themselves as "professionals" only. This feeling is supported by two diametrically opposed views of management. Stangely enough, sometimes people hold both views at the same time. The first is that "management" is a fancy clerical job beneath the dignity of someone who has had sound training and experience as an educator. The second is that "management" tasks call for knowledge and skills learned only in graduate courses in business administration. Management is necessary in all organizations. The alternatives to having outstanding professionals learn to manage well are management by people who don't completely grasp

and can't deal with professional issues and problems, or competent professional educators who waste time, energy and resources by poor management. Management of a cooperative education program at any level is not quite the same as managing a complex world-wide organization. The necessary principles, procedures and techniques can be learned, tested and used effectively on the job. One must be willing to spend some time learning and to take some risk in using new approaches. This guide will provide an introduction.

7. "The advisory committee is no help."

The point of this usually is that the advisory committee members either do nothing or want to boss everything. The first situation arises when advisory committee members are chosen to serve only as "cheer leaders" and not participants in planning, implementing and monitoring the cooperative education program. The second when there are long-term members who predate the staff members or when staff constantly comes to the committee with excuses for poor performance and requests assistance, or when the staff misunderstands the role of the committee. In this last situation the committee frequently is trying to help and is making proposals which the staff doesn't want to accept. Good management would call for an open discussion with the committee and for staff to really try to use some of the committee's ideas.

These, then, are some of the issues managers face. It is only by understanding the nature and impact of the

managerial role and its importance for effective education and development that it becomes possible to improve cooperative education and to make effective and efficient use of the resources available.

The basic managerial role is to coalign\* in time and space all activities, people and resources available to achieve the organization's goals. This involves directive action in the areas in which the manager has discretion and adaptive action in the areas where the manager cannot control events. In this sense management or administration processes and activities are both the glue and directing force to get and keep activities, people and elements lined up so that they mesh and support each other in working toward common goals.

Preparing for this complex and difficult role effectively requires not only having the professional educational and counseling competencies and such management competencies as budgeting and reporting, but those needed to:

- comprehend the actual and potential impact on the program of factors, elements and people in both the internal and external environments;
- define and deal effectively with the relevant environments;
- align cooperative education activities and elements so that the program will stay on the planned course and achieve the desired goals;
- obtain and use information about internal and external environments, program activities, functioning and achievements, and changes in these to determine whether or not elements

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\*To coalign is defined as: To bring into agreement and mutual support in time and space sets of elements and factors which impact on the ability of a system to achieve its objectives. Some of these sets are: school faculty, students, parents, employers, resources, teaching technologies, and teacher/coordinators' tasks. Each of the sets is internally aligned to achieve intermediate objectives. Many of the sets are not amenable to change by the administration, e.g. local labor market conditions. In these cases adaptive rather than directive action is called for.

are in coalignment and planned progress toward goals and objectives is being achieved;

- exercise control to bring elements into coalignment to direct activities toward goals and objectives.

Beyond their role to coalign activities, people and resources, managers are expected to play a number of other roles. The nature of an organization and its relationship to its environment determine the emphasis and importance assigned to each role. Some of the more important roles that we found managers\* of outstanding programs performing were:

1. Liaison, linkage, and spokesperson for cooperative education with other educators, employers, and the community at large.
2. Information source for management, program, publicity, etc.
3. Planner and controller, determining how to reach cooperative education's objectives, measure progress toward objectives, and take appropriate action when measurement indicates achievements do not meet planned criteria.
4. Guide, trainer, motivator, and leader for all involved in their programs.
5. Director of operations and supervisor of the people in their units in planned activities.

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\*We are including as managers, cooperative education directors and coordinators in large school districts and state education departments, as well as local educators responsible for several occupational areas.

6. Evaluator and innovator to measure program output and to design and implement changes to improve the cooperative education program.

Each of these roles is important for achieving success.

Questions for Self-Evaluation

- Has management of the program ever been examined?
- What are my managerial tasks?
- Which of these is most important at this time?  
Over the long term?
- How well am I performing the managerial tasks?
- How can I improve my performance of these tasks?
- Is it worthwhile to spend some time trying to improve management? Why?

### SECTION II - THE ENVIRONMENT

Most people consider management to be the tasks involved in planning, conducting, and monitoring the activities of an organization to produce whatever it is that the organization is expected to produce. Very few consider the roles of management in representing the organization and dealing with its environment, i.e., people, organizations and forces outside that can impact on its functioning. Most tend to ignore the key role of management - to determine, scan, and respond appropriately to the organization's environment.

The environment is a particularly important factor in cooperative education activities which seek to link school (inside the organization) with work (outside the organization) for the purpose of facilitating the passage of secondary school students from school to full-time work. In the following discussions we take the cooperative education unit as the focal organization and consider the rest of the educational system as part of the environment.

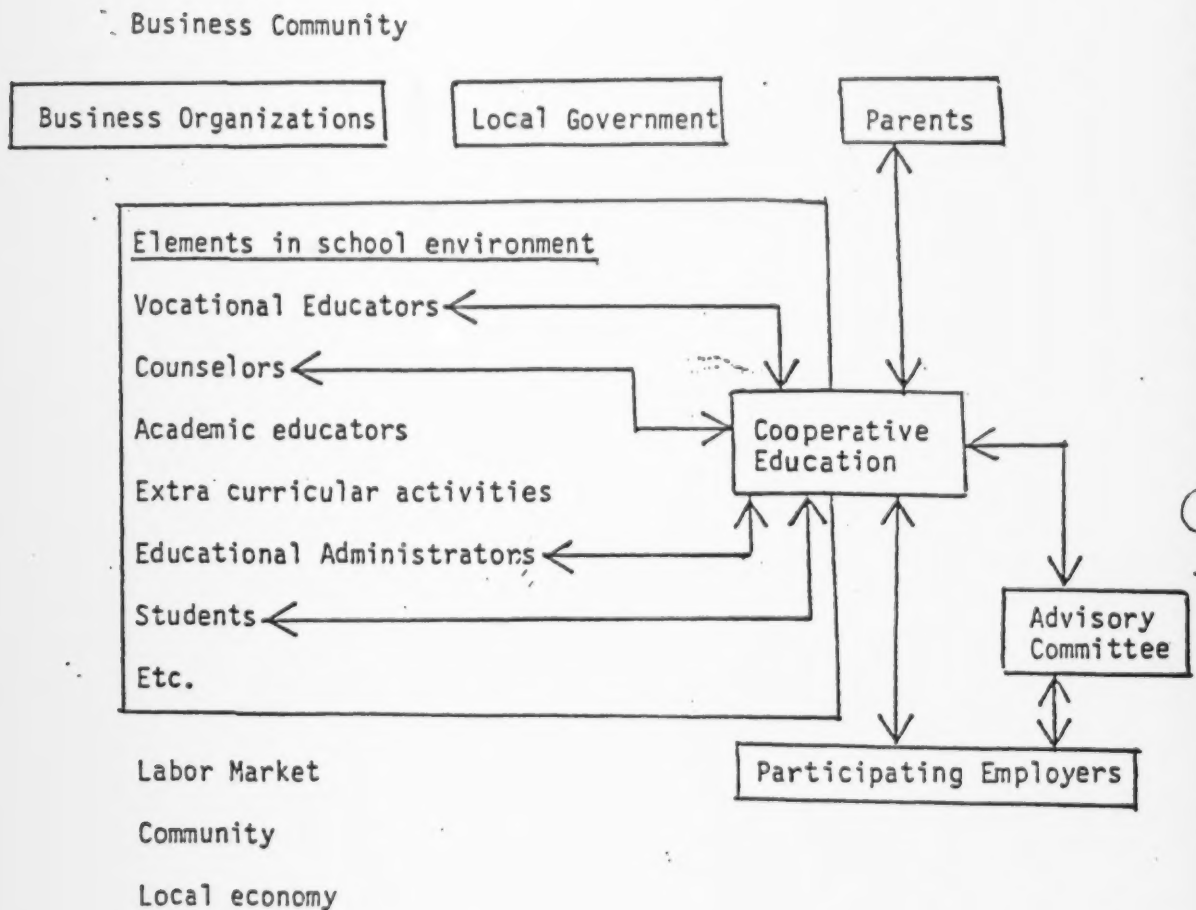
Chart 1 indicates the forces in the environment identified by people in cooperative education who have spent some time considering the situation. These include the rest of the educational system of national, state, district and local levels; participating employers; the advisory committee; the business community as a whole; state and local governments; parents of participating and potentially participating students; and economic conditions. Not all agree on the nature of the forces or on the nature and direction of the impact. You should prepare a chart to describe the situation as you see it. The relationships are indicated as either direct by arrows with the arrowhead indicating the direction of impact or diffuse with no arrow.

Identifiable environmental groups outside of the educational system are in boxes. These are elements with which a direct relationship can be established. General, diffuse elements are unboxed. These are forces which are not, in general, amenable to being influenced by any one in cooperative education and to which it is necessary to adapt.

Cooperative education is shown as both inside and outside the school system. This has both advantages and disadvantages.

CHART 1

COOPERATIVE EDUCATION AND ITS ENVIRONEMENTS



To succeed in dealing with the relevant environment, the cooperative education staff -- managers and teacher/coordinators -- must not only be able to adapt goals and activities to environmental forces but should be able to influence the views and activities of many environmental elements. In order to be effective, cooperative education people must be accepted as responsible, competent educators by employers, and as knowledgeable, competent and influential in labor market situations by other educators. People in cooperative education must be skilled in anticipating and responding to environmental forces and in directing forces in the environment to advance their objectives.

The first step in this process is to be able to identify the environment relevant to cooperative education both outside of the school system and that part inside the system which is not concerned with the success of cooperative education but which can influence it. Once the elements of the relevant environment are defined and the nature of their relationship to cooperative education is identified, it is possible to develop plans either to change the nature of the environment or to adapt the cooperative education program to cope with it. "Scanning" is the process of defining the relevant elements in the environment and identifying their impact.

Some elements of the school environment to which cooperative education administrators should be sensitive are:

- general rules, policies, priorities, etc. affecting cooperative education within the educational system,
- nature of in-school preparation of students for employment (trends, resources available, curriculum, teachers, etc.),
- willingness and ability of vocational and academic teachers and counselors to meet needs of cooperative education students and employers,
- acceptance by others in the system of participation by employers and others outside the system in educational matters,
- allocation of educational resources,

- flexibility in adjusting administrative rules, schedules, etc. to meet employers' needs.

Some elements and factors in the external environment which are relevant for cooperative education are:

- the labor market -- the nature and level of skills required for entry and the availability of entry jobs,
- support for cooperative education by business groups and employers generally,
- participating employers' ability and will to provide acceptable supervision and training for cooperative education students,
- community support for cooperative education,
- willingness of employers to change work rules, schedules and jobs to meet students' educational needs,
- the status of secondary education in the community,
- employer's views of desirability of employing high school students and graduates.

The labor market is typical of the diffuse forces with which it is necessary to learn to cope. Educators can do little to change the state or nature of the labor market. However, it is important to have knowledge of these and how they impact or potentially impact on the activities of cooperative education in your area. They provide the basis for planning the curriculum, guiding vocational counselors, and focusing the search for appropriate work stations. These, in turn, help determine guidelines for objectives, program priorities, budget allocations, and controls.

While study of the external environment shows that managers of cooperative education programs are not in complete control and can't be held completely responsible for the state and outcome of cooperative education programs, they are not helpless chips buffeted about by the vagaries of the labor market and employer whims. They are actors who can anticipate and take appropriate actions.

The role of management is:

- to be aware of and sensitive to the nature and impact of external and internal environments,
- to define the relevant environmental elements,
- to determine and plan to deal effectively with recurring environmental situations, in particular to use cooperative education's ambiguous boundary-spanning role,
- to scan the defined environment for problem and opportunity situations and to take appropriate action at the most opportune times.

Cooperative education can serve its linking role most effectively when all the people involved both in the school system and in the business world see and accept that their enlightened self-interests are served by participation and cooperation and the reciprocity among school, students, employers, and community is felt by all.

It is the job of cooperative education administrators to help teacher/coordinators who are on the firing line to influence environmental elements when possible and to adapt them when necessary. This help must include developing

incentives for employers to participate which will not diminish the value of participation for students or reduce the participation of disadvantaged students.

Exchange theory and field experience indicate that linkages between organizations do not develop or remain where there is no exchange of benefits between the organizations. Thus in successful programs we audited, the school systems received material and political support from the business community and the business community was able to influence vocational education.

Beyond exchange, educators in successful programs worked hard to develop personal relationships with leaders in the business world and participants in the program, to provide public recognition for contributions, and to show appreciation for employers' efforts. These and similar activities tend to stabilize and strengthen linkages.

Questions for Self-Evaluation:

- What information do you have about each of the following:
  - labor market?
  - business community?
  - participating employers?
  - parents of cooperative education students?
  - government agencies?
  - political community?
  - community in general.
- How are you using the information you have?
- Is there any other information that would be useful? How can you obtain this information?
- What is cooperative education's relevant school environment as far as you are concerned? Why?
- How can each of these elements or persons or situations affect achieving your objective?

- Which can you influence? Which can't you influence? Why?
- Do you have a plan to influence your environment?
- Do you have a plan to adapt to your environment?

SECTION III:  
MANAGEMENT INFORMATION

The information needed by cooperative education administrators differs, depending on whether they function at the state, district, or school level, in an urban or rural area, or in an area with a booming or depressed economy. However, the structure for managing an information system is the same in all of these situations. It is derived from the goals and objectives of cooperative education and the role assigned to the manager. It involves:

1. identifying the information needed to play the role effectively, and to achieve the goals and objectives, and then determining the data from which the information can be derived.
2. developing guidelines for collecting, organizing and analyzing the data for producing the required information.
3. disseminating and using the information to improve program functioning and management.

Generally people at the school level need more detailed, specific, and accurate information usable in the short term, than people at other levels. People at the federal level need more comprehensive information which is valid for the long term. State and district needs fall between these two. Further, the sources and flow of management information tend to be different at different levels.

In our discussion of management information, we distinguish between "data" and "information." We define "data" as the raw, unorganized, uninterpreted opinion, facts and numbers which are obtained by measurement, observation, questionnaires, surveys, etc. We define "information" as organized knowledge about a situation, activity, or relationship which can be used in decision making, planning, etc. Sometimes data are easily converted into information. Sometimes sophisticated statistical techniques are employed. The kind and usefulness of the

information derived from data depend to a great extent on the methodologies used to organize and analyze the data.

Chart 2, "The Flow of Information, Decision Making, and Activities in Cooperative Education at the School Level," on the following page, is complicated and you may find it difficult to follow. Yet it is a considerable simplification of the actual flow of information needed to make the management decisions and direct the activities for effective cooperative education. For example, it does not include information to or from the external environment\*. You can pass the chart by with, "O.K., we have to get information from several sources," or spend a few minutes trying to decipher its import.

If you decide on the second approach, let us help you with some explanation.

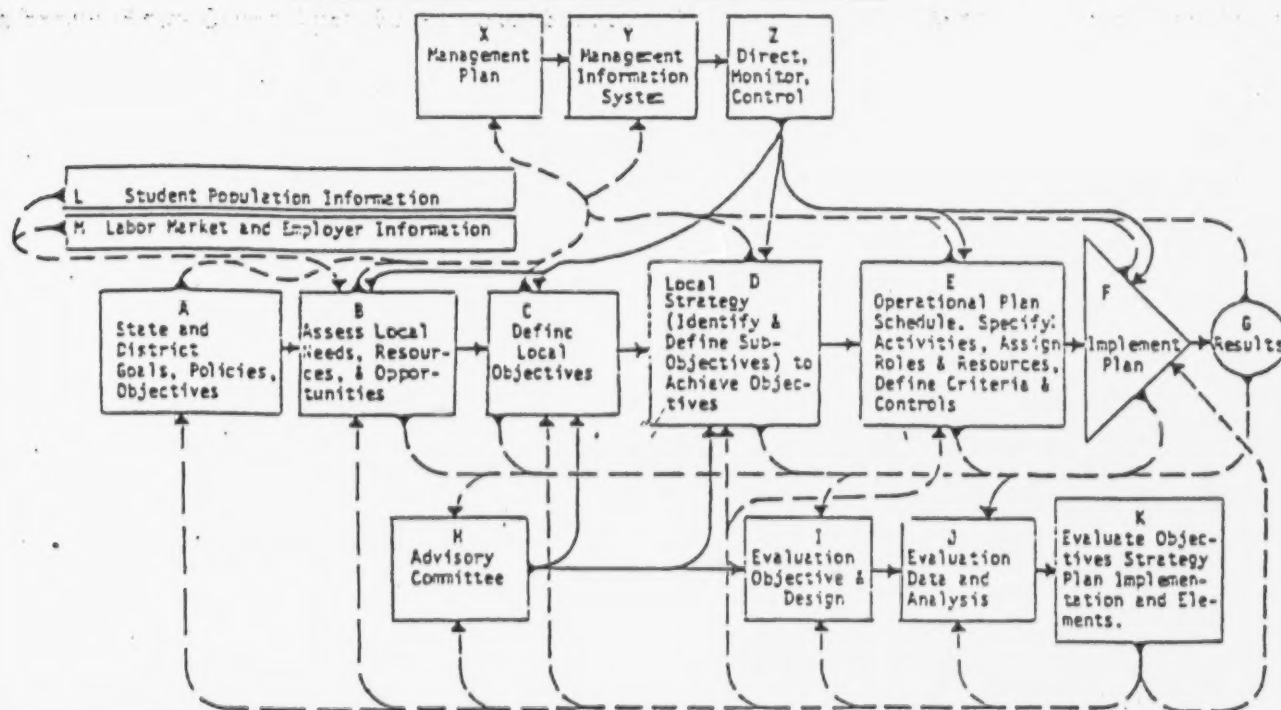
Management is concerned primarily with the three boxes X, Y, and Z. The lines connecting them to the rest of the chart indicate the nature and extent of the Management Information System. These three boxes constitute the management sub-system for cooperative education. It is one of the three related sub-systems portrayed in the chart. The program sub-system is the second. It includes A, B, C, D, E, and F which diagrams the primary activities, flow of information, and decision points for programming and conducting cooperative education. G is the system's output or the results of the program's activities. The chart indicates the flow of information, sequences of activities and directions of activity which relate elements of the program sub-system to the other two sub-systems.

The role of the advisory committee as indicated is ambiguous, both in and out of the program sub-system. This parallels real life. The roles and influence of advisory committees vary considerably. At one end of the scale,

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\*With the exception of the information from Labor Market and employer.

CHART 2  
THE FLOW OF INFORMATION\*, DECISION MAKING, AND  
ACTIVITIES IN COOPERATIVE EDUCATION\*\* AT THE SCHOOL LEVEL\*\*\*



\*Solid lines indicate sequential activities, decision making, etc. Broken lines indicate flow of data, advice, information, etc.

\*\*The decision making and activities of educational staff are not specifically noted as these provide the motive force in the flow itself.

\*\*\*With some obvious modification, such as deleting the word "local," the same flow chart will describe the flow for state and school district.

some are non-productive, uninfluential bodies fulfilling a paper requirement. At the other end there are active bodies with significant input on objectives, priorities and programs and providing strong ancillary support and resources. For simplification the chart does not indicate the linkage and in many respects the overlap between management and the advisory committee. From a management viewpoint, the best advisory committees are strong, fully participating committees which can provide management guidance, curriculum input, tight linkage and communications with the business community and the entire community and information to strengthen and enrich the program for both in-school and on-the-job learning. Whether the advisory committee is strong or weak, it should be provided with information from the sources indicated in the chart.

The flow of information to and from the evaluation sub-system (I, J, and K) begins and ends in the primary program sub-system. Evaluation converts data relating to objectives, activities and results into information useful for determining the desirability of making changes in decisions and activities in the program sub-system.

We have distinguished between the sub-system for management and those for program and evaluation. This is an oversimplification in terms of not showing degree and thrust of emphasis and many relationships among these systems and other sub-systems not in the chart, e.g., in-school education, and between the system as a whole and its relevant environment:

Management is the driving force behind policy decision making, program activities, and the flow of information. This is only indicated by the solid lines emanating from "Direct, Monitor, & Control" (Z) and going to program boxes B, C, D, E, and F. Further, many activities and decisions in different flow lines are not only closely related, they frequently overlap. The data needed for the Management Information System (Y) and for Evaluation (J) are identical in many cases. Activities in developing the Management Plan (X) and the Operational

Plan (E) are interdependent. The chart does indicate the need and nature of the flow of information required for planning, directing and monitoring, and feedback for controlling and improving cooperative education activities. Note the importance of data to provide information management needs to perform its role.

While relatively few of the fifty Key Elements that we identified are shown on the chart, virtually all are involved. Almost all would be included in two boxes: Operational Plan (E) and Implement Plan (F). Box B includes information about "Resources Provided by Government, and Resources Obtained from Other than Government Sources." M is "Labor Market Information." L is part of the element "Selecting and Assigning Students."

Boxes A and C together constitute the element "Defined Goals and Policies." Box D is in part included in the element "Program planning," which in addition encompasses all of Box E. Circle G and the information lines emanating from it indicate the flow of raw data from element "Follow Up." Box H represents all the decisions and activities described in element "Citizen Advisory Committee." Element "Program Evaluation," encompasses Boxes I, J, and K. Element "Program Administration" encompasses Boxes X, Y, and Z.

There are three phases to the development and use of a management information system (MIS). These are:

Phase 1: Identifying the data to be gathered,

Phase 2: Gathering, storing, organizing and analyzing the data,

Phase 3: Using the information.

Plans for these three phases must be integrated.

The use to which the information is to be put determines the data which must be gathered. The data which

can be obtained determines the information that can be produced and the use to which the information can be put.

Phase 1: Identifying the data to be gathered. After program and management objectives have been established and a general plan to achieve these agreed upon, the stage is set to identify the data needed to provide the information for:

- a. developing the operation and management plans,
- b. implementing the plans,
- c. controlling operations,
- d. evaluating the plans and their implementation,
- e. reporting on activities.

Determining the data needed involves working backward from the use to which information will be put, to the information needed, to the data which will yield the information. Let us illustrate with developing and justifying the annual budget request. These are important management responsibilities for which the MIS should provide the necessary information. Working backwards from the end-product, we have to have information on which to base and justify our request for a specific number of teacher/coordinators, clerical and secretarial personnel, travel expenses, office space, supplies, etc. The number of teacher/coordinators needed will depend on the number of students who will participate, the tasks teacher/coordinators are expected to perform, the amount of time teacher/coordinators will be expected to spend performing each task, etc. Some of the data needed are: the amount of time teacher/coordinators need to perform each assigned task, the number and types of students who will be enrolled, the number of students of each type that have been supervised by a teacher/coordinator in the past, etc.

Weakness in data identification generally stems from failure to track through the entire sequence from use to which information is to be put, to information needed, to data which can yield the required information. Some other weaknesses are: gathering data in a haphazard manner with no clear and unambiguous relationship to the information needed; identifying much more data as "needed" than can possibly be analyzed and converted to information, having no concern with the processes of analysis. A common example of the last flaw is gathering some data in terms of one unit, and some (which should be combined with these) data in terms of another unit. For example, the first may be the number of visits a teacher/coordinator makes in a term to work stations, and the second, the number of hours the teacher/coordinator spends in the field in a month. These two cannot be combined to tell us the average number of hours required for a visit to monitor a work station as there may be field visits which are not to work stations.

Other weaknesses are obtaining too few data to provide significant information, such as relying on single cases and anecdotal material. These are useful for sparking ideas and providing leads. They are not acceptable as data for reliable, valid information.

As far as possible, data should be defined in generally acceptable terms. Otherwise data collected by one administrator cannot be compared or included with the data collected by another. Further, unless generally accepted definitions are used, data tend to be useful only for one purpose and for one person rather than for many purposes and people.

Phase 2: Gathering, storing, organizing, and analyzing the data. After the required data are identified, the next step is to review the data which are available and currently being collected, and the use which is being made of the data. The results of this survey should be compared with the identified needs to determine:

- identified data needs (from Phase 1)  
which can be satisfied by data currently

available,

- additional data which are needed,
- improved collection of currently collected data to meet required reliability and validity standards,
- data which are being collected which are no longer useful,
- current sources of data which could become sources for additional data,
- use being made by others of the data collected.

#### Data Gathering

The source and means for obtaining data frequently determines the cost and usefulness of the information produced. For example, if the source of the data has no interest in obtaining or providing the data, the probability of their usefulness is diminished. If the collection process calls for going back to the same source several different times for data, the cost of collection will increase and the reliability will decrease. Some principles for gathering data are:

- a. Have people at the point where data are produced identify some of the problems in providing the data. Solve these problems and try to get these people to provide the data.
- b. Try to obtain the data from sources which need the data for their own operations.
- c. Collect data by a specified process using carefully designed forms and unambiguous accepted definitions.

- d. To the extent possible collect specific data only once, i.e., don't ask for the same data on different forms.
- e. Request data from the same source as few times as possible, i.e., include all you will need in a single request.
- f. Develop good, non-threatening relationships with the persons providing the data.
- g. Design the process and the instruments for data collection with your data storing, organizing and analyzing methods in mind. These can be hindered or facilitated by how the data are collected and presented.

#### Data Storage and Organization

Some principles for storage are:

- a. The data should be easily available when needed.
- b. Data from different periods and sources should be easy to combine and to distinguish from each other.
- c. Specific, well designed schedules and processes should be established for retention and purging of data.
- d. If data are stored in a computer memory, the method of storing should facilitate and minimize time required for organization

and analysis.

- e. The storage system should be simple, easily understood and regularly monitored for possible error.
- f. Data which are needed for different purposes should be kept separate.

Some principles for organization of data are:

- a. Organization should facilitate analysis, conversion of data to information and use of the information.
- b. As little as possible of the potential information contained in the data should be destroyed by organization. For example, while the arithmetic mean of academic grades of students is a more useable piece of information than the set of individual grades for three hundred students, a great deal of information is lost by retaining only the mean grade.
- c. Make as much use of computer services as possible, but don't depend on it entirely; manual systems are more flexible and permit better organization of non-numerical data.
- d. Plan, design, and provide instructions and guides for the organization of the data so that anyone can understand and continue the process.

### Analysis

The purposes of the analysis are to provide information:

- a. to help achieve management's objectives. These include:
  1. developing the management plan,
  2. planning operations,
  3. monitoring operations,
  4. directing how operations should be changed when activities are not achieving planned intermediate objectives.
- b. to provide leads for improved objectives, policies, and strategies,
- c. to indicate how the management information system can be made more efficient and effective,
- d. to indicate how management can best help teacher/coordinators and others responsible for program implementation achieve program goals and objectives.

The information resulting from the analysis should:

- a. be responsive to the identified needs,
- b. include estimates of its reliability and validity. This cannot usually be in terms of statistical tests and probability values. However, information

is more useful when a finding is followed by a statement such as "this was substantiated by three independent equally competent observers" than when there is no indication of confirmation of this kind,

- c. be presented in a manner which facilitates its use. There should be, to the extent possible, use of universally known and accepted terms, criteria, techniques and tests,
- d. indicate the nature of the collection methodology for both current data and the data base which is used for comparison.

Phase 3: Use and dissemination of information. Chart 2 indicates the flow of data to management and indicates where the information could be used. However, much more than a flow chart is needed to ensure that MIS is cost effective. Some suggestions are:

- a. Plan for the utilization of the information. This leads back to our starting point of "information needs" to make sure that the information gets to where it is needed.
- b. Check to determine what change results from having the information. If there are no significant changes over a period of time, the information may not be needed.
- c. Periodically review the information provided to determine whether it is as useful as it

could be and what changes would improve its value.

- d. Provide feedback to the people who provide the data. In the course of our study, more than one teacher/coordinator complained about providing data and never getting any feedback on their value and usefulness for helping to improve cooperative education programs.
- e. Consider the usefulness of each piece of information produced for improving not only the element for which the need was identified, but for management and for the conduct of cooperative education as a whole. In particular, ask yourself in every case, "how can this information help obtain and develop good work stations for disadvantaged students?"

Summary. A Management Information System is a continuous process of identifying data and information needs; planning for gathering, storing, organizing and analyzing data; producing the information; and using and disseminating the information. As goals, objectives, strategies and activities change, so do the management information needs. Even without changes in these variables; review of the MIS frequently identifies new needs and data which are no longer useful. Consequently, it is necessary to periodically review the data collected and the uses to which they are put. There are five steps to this process of updating the MIS.

1. Identify and review the information and the benefits derived from the information.
2. Calculate the cost of producing

the information and the benefits derived from the information.

3. Take a hard look at the uses of costly information and at the information available for determining goals, objectives, and programs. Determine what is needed and not available and what is available but not worth getting.
4. Review the processes for gathering, storing, organizing and analyzing data to make it more cost effective.
5. Based on the conclusions of "3" and "4" revise the management information system.

Questions for Self-Evaluation:-----

- Have you identified the information you need to carry out your responsibilities as a manager?
- Have you determined the data which can provide the information you are missing? What information do you have and what don't you have? Can you obtain the data and convert the data to information?
- Are you using the information you are receiving now?
- Do you have a plan to use the new information?
- How effective is your management information system?
- How valid are your data sources?

SECTION IV:  
PLANNING\* AND CONTROLLING

Planning and controlling are closely connected, complementary management activities. The plan starts from management objectives and delineates priorities, strategies, assignments, activities, etc., to achieve the objectives. In addition, a plan should contain time to be allocated, levels of quality and quantity, and criteria and standards for measuring management's achievements. The criteria and standards are the basis for establishing management controls. Controls are processes and mechanisms for determining whether or not we will meet the time and other criteria for progress and achievement established in the plan, and for taking appropriate anticipatory or corrective action, if we are not.

There is agreement in outstanding programs that planning and controlling are essential for effective cooperative education. There are few programs which do not engage in program planning. The best programs also tend to use controls effectively. Few administrators, however, plan or control activities to achieve management objectives, as distinct from program objectives. Spending time to plan and control management activities will pay off by resulting in less intrusive, more supportive management and improved program activities. Planning helps determine the best ways to reach management objectives without overburdening people engaged in program activities. It will also lead managers to consider criteria and means for evaluating and controlling their own activities, things which management usually ignores.

Management has the responsibility for planning and controlling the achievement of both program and management objectives. At the school level, the teacher/coordinator may be responsible for both program and management activities and tend to run these together; this is almost inevitable. However, being conscious of the differences and overlap, helps in planning and controlling. The overlap among these activities and the focus on program rather

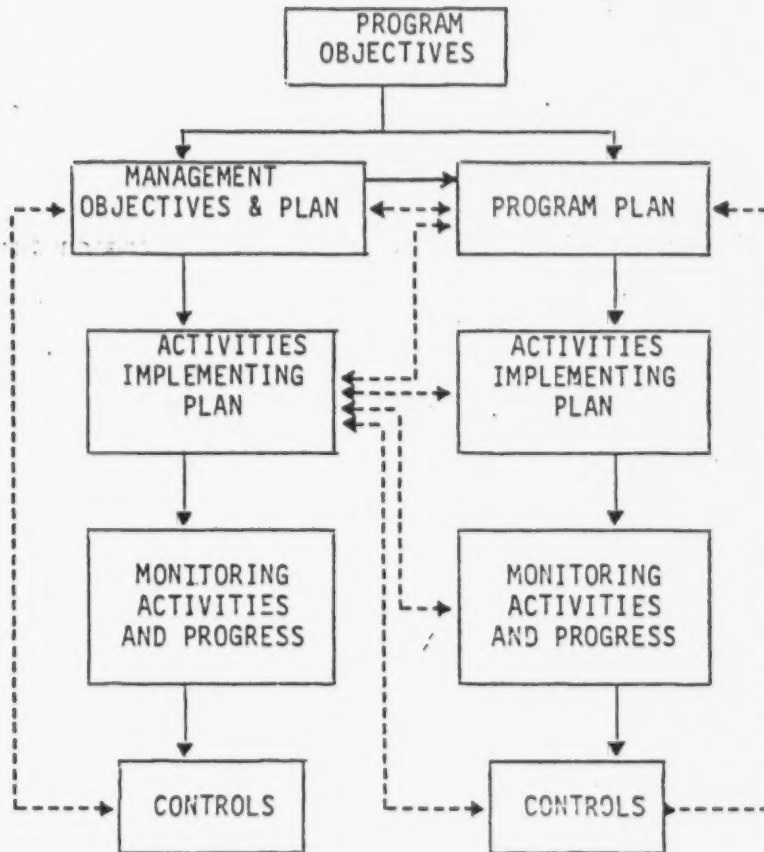
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\*"Planning Program Activities" is included in the manual Keys to Cooperative Education.

than management are additional reasons why management planning and control are frequently neglected.

Chart 3, on the following page, indicates the relationships between management and program planning and controlling. The solid lines indicate a flow of activities and decision making. The broken lines indicate the flow of data and information. The arrowhead indicates direction of flow. Note that management "Activities" is linked to each element in the program sequence by directional information arrows, indicating the flow of information, guidance and direction from management to program and the feedback flow from program to management.

CHART 3  
MANAGEMENT AND PROGRAM  
PLANNING AND CONTROL



Planning. A plan is a statement of proposed activities to help achieve objectives. You determine where you are, visualize where you want to be some time in the future, and design the path to your goal. The path is the plan.

Planning comes before action. It can increase cooperation, reduce confusion, conserve time, energy, and other resources, help anticipate problems and lead to more certain goal achievement. Management goals are to plan, support, guide and link program activities to achieve the goals of cooperative education.

Developing a plan involves ten steps. The completed plan should describe the stage reached at each step and indicate how the "path" leads to the goal.

1. State your specific management objectives and how achieving these will help program people achieve their goals and objectives. (Where you want to go.)
2. Describe the present management situation with respect to these objectives. (Where you are now.)
3. State what management has to accomplish and the time frame for achievement. That is, determine the differences between the situation you want and the situation you have now and by when the differences should be eliminated. (What you have to do.)
4. Identify the resources you have for management and any factor which might hinder or restrict management activities such as time, money, and information available. (What help and barriers exist to your reaching the goal.)

5. Develop criteria and standards to evaluate program achievement in the time frame. (How you will be able to determine whether or not you are on course.)
6. Identify and select a strategy consisting of intermediate objectives which when achieved will add up to achieving your management goals and objectives. For example, if a management objective is to develop and implement a reporting system, some intermediate objectives (but far from all) are: determining how the reports will be used; defining objectives for the reporting system; identifying the information that the reports should contain; determining the time frame in which the objectives should be achieved; locating appropriate data sources; and arranging for the data to be obtained. (Determining the steps which will lead to the goal.)\*
7. Define the criteria and standards you will use to evaluate your performance and progress both for the program as a whole and each intermediate objective. (What you mean by "successful achievement.")
8. Describe the resource allocation, staff assignments, schedule, etc., needed to achieve each intermediate objective; critical points and problems. (The assignment plan.)
9. Describe the activities which will lead to achieving each intermediate objective. (What has to be done -- moving from assignment plan to operational plan.)

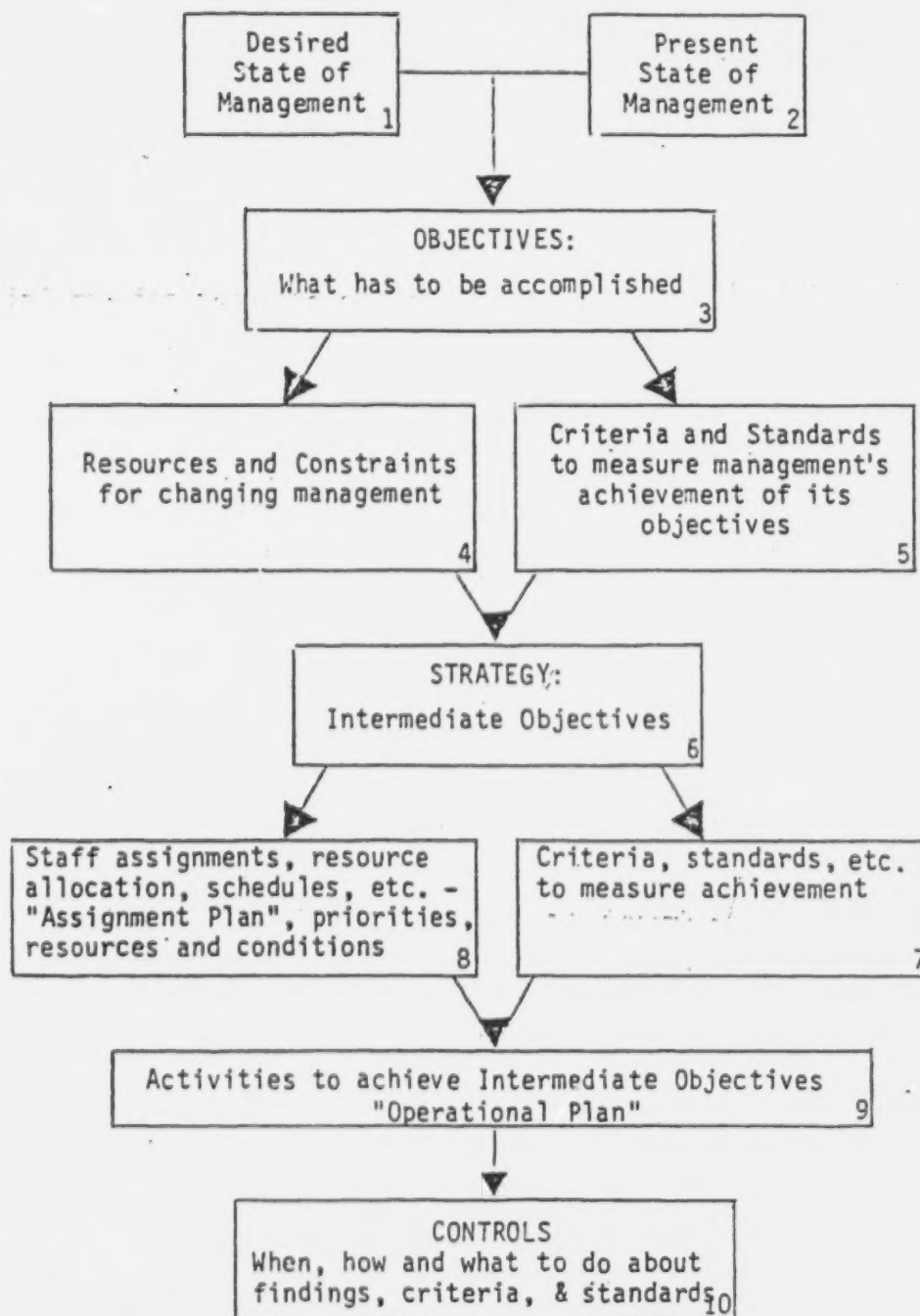
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\*See Appendix A "Force Field Analysis" for an example of one way to accomplish this.

10. Determine the level of control you should exercise over management activities (as distinct from program activities). Identify when and how you will evaluate your progress toward your intermediate and final objectives and indicate how potential or actual failure will be dealt with. (Keeping management on target).

Chart 4, on the following page, is a diagram for developing a plan.

CHART 4  
THE MANAGEMENT PLANNING PROCESS\*



\*The number in each box refers to the appropriate planning step.

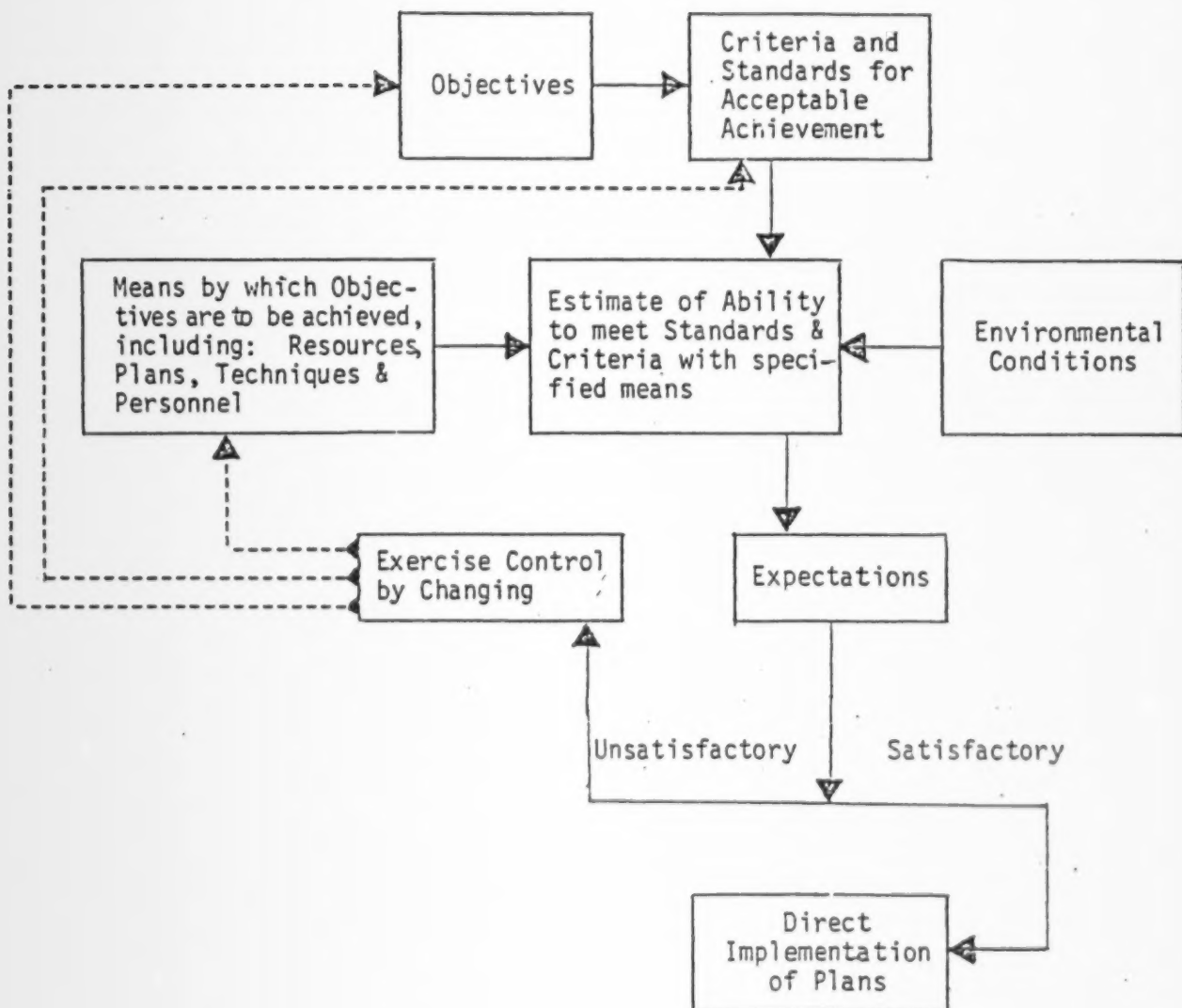
Controlling. Controlling is the process of determining whether what can be accomplished or has been accomplished conforms to the plan. There are, as this definition indicates, two basic types of controls, "feed-forward" and "feedback." If the conclusion you arrive at is that anticipated results (feed-forward control) or actual results (feedback control) are too far out of line from those expected in the plan, you may need to adjust your intermediate objectives, your time schedule, your allocation of resources, and any other factor that you can change.

In feed-forward controls, problems and barriers to reaching objectives are anticipated and compensatory action is taken before deviation from the plan occurs. Sometimes feed-forward controls are used before a plan is fully implemented. A pilot program and a test run are examples. Other feed-forward controls are exercised during operations, when there is an indication that there will be difficulties at a later time. For example, management may find that while the present percentage of graduates finding appropriate employment is satisfactory, the trend over the past three years is going down at a rate which would lead, if continued, to an unsatisfactory percentage next year. Using feed-forward controls would enable you to start the process for taking compensatory action to reverse the trend before this situation is unsatisfactory.

Feedback control is exercised when failure to achieve planned intermediate objectives on time is observed and remedial action is taken to bring performance and progress back to plan. For example, a school district announced that it would provide orientation and training for supervisors of participating employers. The district planned to give a minimum of six half-day programs each month. A teacher was assigned half-time for this activity. At the end of three months, there were only four requests for training and only one program was conducted. Management decided there was a need to identify the causes of why these planned objectives were not being achieved and to take corrective action.

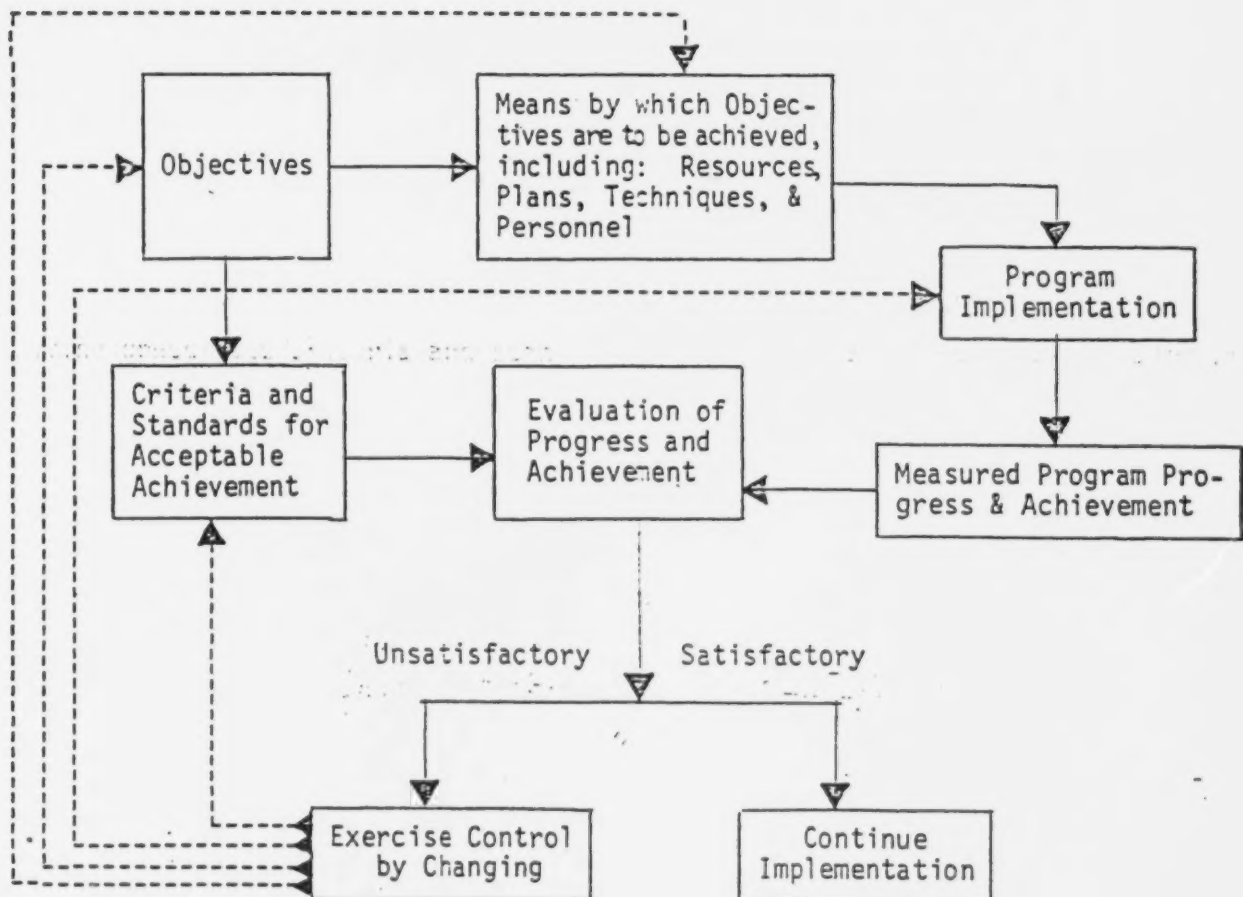
Charts 5 and 6, on the following pages, are diagrams of the feed-forward and feedback control processes.

CHART 5  
FEED-FORWARD CONTROL



## CHART 6

## FEEDBACK CONTROL



A major cost of any control system is obtaining the data and information needed to exercise effective control, i.e., to analyze the actual situation relative to the planned situation and to determine what to do to achieve plan objectives. The reliability and validity of information will be increased and cost decreased when you use the same information for management control purposes that the program people (from whom you must get your information) use for their control purposes. There are additional benefits to using the same information. Among these are:

- you can determine whether program people are obtaining the information they need to control their programs;
- a second, confusing, burdensome data gathering operation is avoided;
- both program people and you will be using the same data bank and the same facts for program analysis;
- management and program objectives and operation will be more compatible.

In general there are two main types of controlling actions, "automatic," and "discretionary."\* Automatic controls define a specific point at which action must be taken, what will trigger the action, and the action to be taken. A thermostat regulating the temperature in a building is typical of this type of control. Discretionary controls define a specific point at which action should be taken, but do not specify the nature and timing of the action to be taken. For example, a program provided for 100 hours of paid overtime work for teacher/coordinators. An automatic management control would be to prohibit any

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\*There are other intermediate types. These two, in a sense, are the extremes.

further overtime when teacher/coordinators logged 100 hours of overtime. A discretionary control would call for management review of the situation when 90 hours of overtime had been logged.

### Summary

A plan starts with a statement of the desired objectives, describes how these are to be achieved, and prescribes criteria and standards for measuring achievement.

Controls compare potential and actual achievement with planned achievement using prescribed criteria and standards and alert management to potential or actual failure to achieve planned objectives. Some controls specify the action to be taken. Others simply sound an alert.

### Questions for Self-Evaluation:

- What information is available for developing a management plan:
  - a. from management plans from preceding periods?
  - b. from management experiences?
  - c. from state and other requirements?
  - d. from evaluations and reports?
- Have you determined what the management plan should achieve?
- Have you identified the principal criteria, situations, problems, and issues which should be considered in the planning process and in the final plan?
- Are you involving others who should be involved in the planning process?
- Has responsibility for preparing elements of the management plan been assigned for:
  - a. what the plan should contain?

- b. information and other resources needed and available?
  - c. format, layout, order, detail, etc.?
  - d. determining dates for drafts and finals?
- Has responsibility for oversight of the planning process and for the review and determination of acceptability of plan been assigned?
- How effective were management controls last year?
  - a. What use was made of the management control information?
  - b. What information was obtained?
  - c. What were the strong and weak points?
- How are controls integrated into the planning process and final plan for:
  - a. control data?
  - b. criteria and standards?
  - c. critical points?
  - d. timing?
  - e. feed-forward controls?
  - f. feedback controls?
- How compatible are required data with those that program people gather for their own purposes?
- What are the arrangements for obtaining required data? -- Who? What? When?
- What are the arrangements for converting data to critical information? -- Who? What? When?
- What are the arrangements for taking action on control information? -- Who? What? When?
- Who is responsible for the evaluation of control system and process for next year? -- Who? What? When?

### SECTION V - HUMAN RELATIONS

A universal characteristic of outstanding cooperative education programs is the presence of an outstanding teacher/coordinator. This observation was made by administrators at all levels. The success of a program depends less on the quality of design and structure and amount of resources than on quality of performance of the people involved. We saw a number of programs at the school level which were poorly funded and not very well designed which were successful because of the will and competence of the teacher/coordinator in working with employers, students and other members of the teaching staff.

A major job of a manager -- some would say the major job -- is to achieve the organization's goals working through people, motivating and helping subordinates improve their performance. Nowhere is this truer than with respect to teacher/coordinators. Developing outstanding teacher/coordinators is the responsibility of two types of supervisors -- the hierarchical and functional supervisors. The hierarchical supervisor is the administrator in the school responsible for cooperative education. The functional is a technical expert from outside. A teacher/coordinator in a school is not a subordinate of a district or state department coordinator in a hierarchical sense, but in a professional/functional sense.

Supervision of either a hierarchical or functional nature poses a psychological threat to the people supervised; it purports to evaluate and judge their competence. Feedback and recommendations -- even when presented as "friendly advice" -- for change and "improvement" tend to be resisted. Change in itself is threatening to the ego and security of the person; what was thought to be good, is not. Change never affects one person alone. Not only must he or she change thought and behavior patterns, but others too must be influenced to accept the

change and change themselves to accommodate this change.

Further, the person may not believe that the change is needed or desirable or may be concerned about his or her ability to change.

Successful managers of programs whose effectiveness depends, to the extent that cooperative education does, on the motivation, competence, and willingness of the people on the firing line (e.g., teacher/coordinators) and on the willingness of people outside of the organization to cooperate, tend to be sensitive to the concerns, aims and the well-being of the people with whom they work. Some characteristics of the approach and behavior of many of these successful managers are:

- Their objectives are well-defined and clearly communicated to all involved and a strong effort is made to obtain agreement on and support for the objectives.
- They treat people fairly and considerately.
- Motivation is not a manipulative gimmick, but developed from common objectives and a will to achieve them.
- There is meaningful delegation.
- Two-way communication is developed and maintained.
- Supervision is supportive rather than controlling.
- People are involved in decision making and are promptly informed about decisions which affect their well-being and ability to perform their roles.

- Assignments and standards are challenging, realistic, consistent, and fair.
- Feedback on performance and achievement of objectives is provided regularly and constructively.
- Relationships are open and informal.
- They are outstanding coaches and trainers -- accepted as competent to provide advice and instruction.
- They do not ignore poor performance or failure to achieve objectives. These are dealt with constructively in a timely fashion.

While not every successful manager uses all of these approaches -- they know when and why they do not. Poor managers frequently do not recognize or understand the extent to which their approaches or behavior affect the motivation and performance of others.

Effective functional supervision is much more difficult to achieve than hierarchical supervision. While the functional supervisor usually tries to provide assistance, the person supervised tends to view functional supervision as:

- power seeking, i.e., attempting to impose a philosophy or practice;
- an attempt to demonstrate superiority;
- imposing the goals of another agency rather than the one to which he/she is responsible;

- overly specialized in whatever area the supervisor is interested in and not concerned with the entire picture;
- irresponsible, i.e., the supervisor can leave and has no responsibility for implementation or results.

Some ways to go about solving the problem of resistance and to build up trust and cooperation are to:

- gain acceptance as competent in design and administration of cooperative education;
- build up the change gradually;
- rely less on district or state rules and regulations for authority, and more on helping to develop an effective program;
- be sensitive to the other person's needs;
- identify the other person's problem areas and offer concrete help in these areas.

A unique role of a manager is linking the objectives and activities of his or her organization with those of other related organizations. This calls for the abilities to cooperate and obtain cooperation, to negotiate and to communicate. It involves accepting that good inter-organizational relationships depend on the relationship being worthwhile for both parties.

- Are you accepted as a competent advisor?
- Do the people you supervise tend to discuss problems, changes, etc., with you?
- How much do you know of the concerns and difficulties of people you supervise? People who supervise you? Organizations with which yours is linked? Other people in the educational system?
- Is there open two-way communication?
- Do you provide useful feedback to members of your staff and others with whom you exercise functional supervision?
- Have you evaluated the effectiveness of your communications?
- How well do you know and understand the aims and objectives of the people you supervise and others on whom you depend?
- How well do you communicate your aims and objectives?
- To what extent is there a commonality with respect to objectives of cooperative education?
- How do you rate on the approaches of successful managers described in the text? Why?

- How effective are you in getting others to change their behavior? Why?
- How effectively do you provide help and support for others?
- How effective are you in linking your organization with others?
- Do you review and evaluate your human relations skills periodically? Why? How? With what changes in your behavior?

### SECTION VI - DIRECTING OPERATIONS

The directing role of the manager in ongoing operations of cooperative education includes making the decisions and taking such actions as are necessary to convert a "paper" plan into a series of human actions. Some of these management activities are discussed in other sections of the manual. Some which are not are:

- establishing priorities and allocating resources;
- defining and assigning roles;
- identifying individual goals jointly with others involved;
- providing flexible operating guidelines;
- coaligning activities within the educational system;
- linking with other organizations.

Clarifying goals, objectives and policies, and gaining acceptance of them, involves reviewing these with others involved, relating them to operating strategies, experiences of the past, and the individual goals and objectives of other organizations and people. In addition to eliminating ambiguities, a major purpose of directing is to make adjustments to avoid counter-productive differences and misunderstandings. It is also an opportunity to reduce "means-ends confusion," e.g., taking money earned by students as the major measure of achievement, rather than the percentage who obtain appropriate employment upon graduation.

Flexible, rather than definitive guidelines should be provided for teacher/coordinators and others. Guidelines are necessary to reduce the need for teacher/coordinators to reinvent procedures and

to provide a frame of reference and a common structure for the activities of people involved in cooperative education. At the same time, rigid guidelines are undesirable as they inhibit operations, innovation, and ability to adapt to environmental conditions, students' needs, etc. General guidelines are usually more desirable than detailed guidelines. There is a trade-off here between a somewhat greater burden on management to maintain control and greater ability by the people on the firing line to make their own judgments and take actions that they think need to be taken. Guidelines should be designed and implemented to help the people who are expected to use them and not to help management exercise control.

Management has the responsibility for establishing priorities among goals and objectives. In our study we found that at every level from the state department of education to the local secondary school there were many goals and objectives. Not only were some at one level in conflict with some at another level, but some were in conflict with others at the same level. For example, providing students with the best learning experience is in some conflict with providing employers with the most competent students for their jobs. It is the role of management to define the priorities for operating personnel and to indicate the nature of appropriate trade-offs when two objectives conflict.

The budget sets quantitative priorities in terms of allocating resources. However it is not the only priority decision. Low-cost objectives may be more important than high-cost ones. Sometimes a small increment of effort in one activity can be much more productive than a greater effort in another. Priorities may change from year to year and vary for programs in different stages of development. It is management's job, in consultation with operating personnel, to set appropriate priorities each year.

The roles that are assigned to different units, sub-systems, and individuals define the structure of cooperative education in a school district and a state. Defining roles to be played fixes the relationships among teacher/coordinators, and school and district administrators, determines activities and their impact on the program and the competencies required by staff members; and enhances the ability of cooperative education to respond effectively to labor market demands and opportunities. At one extreme, failure to define roles can lead to anarchy and chaos as each person does his or her own thing; at the other extreme, over-defined roles tend to encourage rigidity, formalism and failure to take responsibility for dealing with the unexpected. It is a management role to develop an appropriate structure and to monitor activities and results to keep the structure responsive to changing conditions and needs.

Linking education and employment via cooperative education can involve a large number of individuals and units at every level in the educational system, dozens of employers, and many civic and community organizations. The teacher/coordinator does not have the time, status and other resources to play this difficult role alone. It must be a primary responsibility for managers and coordinators at the district and state levels to provide the technical assistance and support programs needed.

Educational goals, activities and schedules must be coordinated and adjusted to meet environmental conditions. Accomplishing this is an important management responsibility. The specific nature of this responsibility varies from level to level and from time to time. However, the role is always to produce coordinated, integrated activities and relationships which will help students graduate and get jobs.

At the school level, the teacher/coordinator and administrator must influence vocational education to meet employers' needs and urge counselors to inform

students of occupations in which there are jobs. At the district level, the administrator must develop curriculums, allocate work station opportunities to different schools, provide resources to reduce the burden on the teacher/coordinator, prevent counter-productive competition, and maximize results for the district.

While selecting staff members for cooperative education activities is usually a responsibility of principals, superintendents and others in the hierarchical chain of command, managers can and should make recommendations. Further, after people are appointed, it is the manager's responsibility to coach, train, and counsel them to help them become competent in their assigned roles.

A final, all-inclusive, management role is to identify and define problems and help others involved to solve the problems they face in reaching cooperative education goals.

There tends to be more rapid turnover among people in cooperative education than in classroom teaching. In the exemplary programs we visited, managers made conscious provisions for continuity of commitment and operations.

#### Questions for Self-Evaluation

- Do you periodically review your activities as a manager: the role you are playing in directing cooperative education activities, the relative emphasis on planning and control, helping teacher/coordinators, evaluating your use of time, and your effectiveness in directing activities to achieve your objectives?
- What are the guidelines that you impose expected to achieve? How well do they serve this purpose? To what extent do they hinder or help teacher/coordinators?
- What are you doing and how successful are you in coaligning activities both inside and outside the educational system to achieve your objectives?
- Are roles and objectives for teacher/coordinators and others defined with the participation of all people involved?
- Do you make staffing recommendations?

### SECTION VII - EVALUATION

There are two types of assessments. The first monitors a program during the course of the year and makes adjustments as needed. We covered this kind of assessment in Section IV "Planning and Controlling." The second type we denote as "evaluation." This type consists of a review of the entire process from definition of goals, through program design and implementation, to output over the long-term.

Evaluation is not concerned with making corrections to bring operations back to plan. It seeks to determine how to improve the entire process for the next year. Accordingly, it compares program output with program goals and input, and design with actual implementation. The objectives are not only to compare intent with what actually took place, but to determine: why there are differences and how these can be reduced, whether or not objectives are still useful, the contribution of each program element, etc.

Output is measured in terms of factors such as percentage of graduates who get jobs in the occupations in which they were trained, employment records after two and three years for participants and non-participants, employers who are satisfied and dissatisfied with the program, and meeting labor market needs. Input is measured in terms of the resources and support for cooperative education. The activities of cooperative education which are evaluated should include all 50 elements we have identified. (See Keys to Effective Cooperative Education.)

Some data collection and analysis activities are focused on specific elements of design and implementation. Other activities focus on more general factors. The availability of appropriate information from your management information system determines your ability to identify and evaluate specific elements in design and implementation which should be changed for the next program.

The purpose of your evaluation is not to determine whether cooperative education is a desirable

educational activity, but how to make it more useful for students, employers and the community at large, and how you can better help these people. It is not profitable to evaluate or to seek to change every element and activity each year. Evaluation should focus on the most costly and important elements. It should distinguish among:

- Goals and policies
- Program design and planning
- Program implementation
- Management.

The most common type of evaluation reported in literature seeks to assess program design and determine whether or not a specific type of program is cost/beneficial. However, design is frequently not the cause of success or failure. Everyone we interviewed indicated that the primary factors which differentiated good and poor programs were the competence and will of the teacher/coordinator and the administrative support he or she received. In short, the crucial factor is program implementation.

The purpose of management evaluation is to answer questions such as: Why did this happen? What was the output? What elements were effective, not effective, too expensive, etc.? Why? What can be done to improve effectiveness and reduce costs?

The phases of evaluation and questions to be answered in each phase are:

1. Assessment of evaluation

- Why is evaluation desirable?
- What should be the focus of evaluation?

What improvements should result from evaluation?  
What are we willing to spend?  
Can we achieve our evaluation goals with these resources?  
Would evaluation be cost-beneficial?

2. Design

What information do we need?  
What data will provide the information?  
How can we obtain the data?

3. Use

Who will be responsible for reviewing the evaluation and for recommending change?  
Who will be responsible for directing change?  
Who will implement change? How?

Questions for Self-Evaluation

- On what basis do you determine whether or not to make changes, and the nature of the changes, in management design and implementation? Why?
- Do you evaluate management activities? Why?
- Would additional management evaluation be useful? Why?
- Do you assess the need and value of evaluation? How? How is the assessment used?
- Do you know what data are needed for evaluation? Do you routinely collect the data needed?
- What use have you (or anyone else) made of evaluations of your management?

Final Self-Evaluation

One final set of questions for your self-evaluation of your overall management activities:

- Are management goals, policies, and roles clearly defined at the state, district, and school levels? Specify the most important for each level.
- How do your objectives fit into the pattern and how does carrying out your role lead to achieving your objectives?
- What are the roles of state, district, and school staff and the advisory committee in:
  - a. planning?
  - b. conducting?
  - c. monitoring?
  - d. controlling?
  - e. evaluating?
- To what extent are activities in each of these five areas coordinated?
- What is your process for developing an operating plan for next year?
- What use do you make of your operating plan?
- What labor market information does each of the three levels need? How is this obtained? What use was made of it last year?
- Does your management plan include indicators and measurable objectives and standards which can be used to monitor and control activities and progress? What are they and how do you use them?

- Do you have a systematic, reliable way to obtain data from each of the other levels? How could it be improved? Do you provide similar data to the other levels?
- Are the management reports that you prepare and those others send to you easy to prepare and use? What use do you make of them? How can preparation be made easier and use increased?
- How do you evaluate the effectiveness and efficiency of each program element, process, and activity? What use did you make of last year's evaluation in planning this year's program?
- How have your management activities led to a more efficient and effective cooperative education program?

### SECTION VIII - ADDITIONAL SOURCES:

#### Where to Look and Learn More About Management

Running a cooperative education program is different from supervising an in-school activity. In some respects it is more like managing a work training and placement program. Consequently, standard texts on school administration do not quite cover all the management aspects of your job. At any rate, we assume that you know about those texts and propose to give you some leads to publications with which you may not be familiar.

#### Planning, Management and Evaluation: Realizing PIC Potential.

National Alliance of Business, 1982, Washington, D.C. This is a manual designed to help Private Industry Councils establish planning, management and evaluation systems. In addition to a discussion of these processes it includes sections on: assessing local needs, defining strategy, designing a program, developing management evaluation plans, and monitoring and evaluating the program.

The National Commission for Cooperative Education has issued several manuals to assist college administrators in developing and implementing plans for cooperative education and improving the management of cooperative education programs. While designed for administrators in post-secondary schools, much of the information and advice is applicable at the secondary level. The address of the National Commission is 360 Huntington Avenue, Boston, Massachusetts 02115.

The National Child Labor Committee has three publications in addition to this one which can be useful. A free copy of each may be obtained, as long as there is a supply. The publications are: "Presenting Cooperative Education", a manual for selling cooperative education to groups and individuals; "Keys to Cooperative Education," descriptions and discussions of key elements in cooperative education programs and leads on how to

Section VIII

improve each element; independent study modules for supervisors of young workers, which, while directed to the work place supervisor, contain useful materials for educational supervisors of cooperative education students and for supervisors of teacher/coordinators.

There have been great advances in the theory and practice of management during the past forty years. While most books and articles deal with management in the private sector, the material is germane to management of educational programs as well. We will describe a few texts that we believe are outstanding. However, these are only personal choices. Every university or medium-sized public library has others equally satisfactory. We have not noted the publication dates as, except for the Thompson book, new editions are published from time to time.

Katz, D. and R. L. Kahn; The Social Psychology of Organizations, John Wiley & Sons. This is a comprehensive text on the structure and functioning of productive social systems and the behavior of the people employed in them. The analysis is based on open systems and social psychology theories and includes discussion of research and its application in practice.

Pfeffer, J. and G. R. Solancik; The External Control of Organizations, Harper & Row. This monograph is "about how organizational environments affect and constrain organizations and how organizations respond to external constraints. It is also a guide to designing and managing organizations that are externally constrained."

Filley, A. C., R. J. House, and S. Keir, Managerial Process and Organizational Behavior, Scott, Foresman & Company, is "an introduction to the current state of management study and practice." It indicates the use in management of behavioral science and quantitative methods and research findings in these and other fields.

Thompson, James D., Organizations in Action, McGraw-Hill Book Company, is a classic monograph on organizational theory which focuses on how and why organizations function the way they do, and tries to account for differences among organizations.

APPENDIX A

Force-Field Analysis  
and  
Example of Use of Force-Field Analysis

## FORCE-FIELD ANALYSIS

### To Identify Opportunities to Improve Cooperative Education

PART 1: Problem Specification: To determine what opportunities there are to improve the effectiveness of the element.

Complete the following items with as much detail as possible.

1. It is important to improve this element at this time because:
2. The following factors which determine usefulness and cost must be considered in any attempt to improve this element:
3. Change in this element would impact on other elements in the following ways:
4. Barriers which may hinder making changes in this element are:

5. The following changes would lead to improvement in this element:

6. Changes in other elements which may improve this element and how each would impact on this one:

PART 2: Problem Analysis: The present status of the element is a result of a temporary balance of driving forces tending to produce change and restraining forces tending to prevent change.

7. List the forces which in general tend to favor change (reasons in "1") and to drive\* toward the specific changes noted in "5" and "6." (Fill in the spaces to the right of the letters. Leave the spaces to the left blank.)

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

\_\_\_\_\_  
\*Some forces may tend to "drive" toward one change suggested and tend to "restrain" making another change. In these cases, note them under the primary direction of thrust here, but note both directions in the chart in item 11.

8. List the forces which in general tend to restrain\* change noted in "4" and in the specific directions noted in "5" and "6." (Fill in the spaces to the right of the letters. Leave the spaces to the left blank. )

a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_  
e. \_\_\_\_\_

9. In the spaces to the left of the letters in item 7, rate the driving forces you have listed from 1 to 5 using the following scale:

- 1 = Has almost nothing to do with achieving change in the element.  
2 = Has relatively little to do with achieving change in the element.  
3 = Is of moderate importance for achieving change in the element.  
4 = Is an important factor for achieving change in the element.  
5 = Is a major factor for achieving change in the element.

10. In the spaces to the left of the letters in item 8, rate the restraining forces you have listed, using the following scale:

- 1 = Has almost nothing to do with achieving change in the element.  
2 = Has relatively little to do with achieving change in the element.  
3 = Is of moderate importance for achieving change in the element.  
4 = Is an important factor for achieving change in the element.  
5 = Is a major factor for achieving change in the element.

\*Some forces may tend to "drive" toward one change suggested and tend to "restrain" making another change. In these cases, note them under the primary direction of thrust here, but note both directions in the chart in item 11.

11. In the chart on the next page, diagram the forces driving toward change and restraining change that you rated in items 8 and 9. Use key words to identify each of the forces driving toward change (a through e). Repeat the process for forces restraining change. If there are driving and restraining forces which relate to the same change, place them in the same slot. If several forces apply to the same change, put them on the same horizontal line. If a force applies to more than one change, repeat it for each change. "Change number" is the number of the changes noted in items 5 and 6\*.
12. For each change with forces rated "5," develop a series of strategies and tactics to increase the potency of driving forces and reduce the potency of restraining forces. Continue this process with forces rated "4," "3," "2," and "1" in order, until an appropriate strategy is developed for each. Stop when you feel that you have developed a satisfactory overall strategy and set of tactics for accomplishing the desired changes. Compare strategies and tactics across changes and eliminate possible conflicts. It may be that some proposed changes may have to be dropped as the restraining forces remain too strong to make change feasible.
13. Describe your plans in detail.
  - a. Specify the problem to be solved or why the element is selected for improvement.
  - b. Describe the changes that will improve the element or solve the problem. Show how the changes would achieve the objective.
  - c. Describe in detail the strategy and tactics for accomplishing the changes. Explain why these should succeed and any trade-offs which may be involved. Describe resources, staff, etc, required and note how these would be obtained and used. Provide schedules, controls, etc.
  - d. Indicate possible undesirable consequences for achieving other objectives and explain any trade-offs.
  - e. Note possible difficulties in achieving the desired change and ways to overcome these.
  - f. Build evaluation and controls into your plans so that change can be evaluated and the element further improved.

\*Indicate whether "5" or "6" and change number. For example, 5/3 indicates the third change in item 5.

change number  
force rating:

FORCES  
FAVORING  
CHANGE

present equilibrium

FORCES  
RESTRAINING CHANGE

force rating  
change number

EXAMPLE OF USE OF  
FORCE-FIELD ANALYSIS

To Identify Opportunities to Improve Cooperative Education

PART I: Problem Specification: To determine what opportunities there are to improve the effectiveness of the element

Identifying Work Stations

Complete the following items with as much detail as possible.

1. It is important to improve this element at this time because:  
Our present activities are not producing enough work stations for all the students who wish to enroll.
2. The following factors which determine usefulness and cost must be considered in any attempt to improve this element:
  - competition from other agencies seeking to place people for employment and training,
  - local labor market conditions, i.e. available work stations and future employment opportunities,
  - resources available for identifying and recruiting new employers,
  - the number and nature of the work stations needed, i.e. number of students in each occupation and level of their competence.
3. Change in this element would impact on other elements in the following ways:
  - Dealing with employer problems: An increase in the number of the new employers may lead to an increase in the number of problems the coordinator will face.
  - Preparing student for work assignment: More resources needed to prepare more students.
  - Matching students and jobs: More time needed for effective matching, matching less qualified students to appropriate jobs will be more difficult.
  - Orienting employers and supervisors: More employers require more time for orientation.

- Criteria for selecting work stations: May have to be eased in order to get sufficient numbers of employers and to place less qualified students.
  - Training work supervisors: More time required to train more supervisors and many will require help in supervising and training more educationally disadvantaged and handicapped students.
  - Monitoring training agreement: More employers will necessitate more time for monitoring and some employers less able to provide good experience and supervision will require more time per employer.
  - Related class curriculum: More time and resources required for more students and less qualified students.
4. Barriers which may hinder making changes in this element are:
- Not enough funds and other resources to cover additional costs in this and other elements.
  - Not enough time for additional work to expand present employer participation and develop new employer participation.
  - Not enough employers within school area to permit expansion.
  - Adverse impact on other elements
  - Adverse reaction from other organizations seeking jobs.
5. The following changes would lead to improvement in this element:
- additional resources for activity;
  - involving others in identifying work stations;
  - weakening criteria for acceptable work stations;
  - placing additional students with present participating employers;
  - gathering information about work stations using mail and telephone rather than personal visits.
6. Changes in other elements which may improve this element and how each would impact on this one:
- Recruiting students: Limiting publicity to vocations leading to probable employment after secondary education would decrease need to expand.
  - Selecting and assigning students: Limit enrollment to students who intend to work full-time after graduation and giving priority to students who would benefit most in making the transition from school to employment would limit need and improve cost/benefit ratio.

- Advisory committee: Increasing number of business influentials on the committee would improve contacts in the business community.
- Employer recognition: More events and more publicity would provide additional incentives for employers to participate.
- Labor market analysis: Determining which employers are most likely to benefit from employing high school students and graduates would help focus recruiting efforts.

PART 2: Problem Analysis: The present status of the element is a result of a temporary balance of driving forces tending to produce change and restraining forces tending to prevent change

7. List the forces which in general tend to favor change (reasons in "1") and to drive\* toward the specific changes noted in "5" and "6." (Fill in the spaces to the right of the letters. Leave the spaces to the left blank.)

5 a. The principal and school board want increased participation in cooperative education. (Help get more resources.)

3 b. Students and Advisory Committee members want to help recruit work stations. (Involve others.)

4 c. There is a community push to improve transition from school to work. (Involve others.)

2 d. Some marginal employers want to participate. (Weaken criteria.)

4 e. There is community and parental pressure to place disadvantaged and handicapped students. (Involve others and get more resources.)

3 f. Many college bound students want jobs to earn money and get out of the classroom. (Involve others.)

8. List the forces which in general tend to restrain\* change noted in "4" and in the specific directions noted in "5" and "6." (Fill in the spaces to the right of the letters. Leave the spaces to the left blank.)

\*Some forces may tend to "drive toward one change suggested and tend to "restrain" making another change. In these cases, note them under the primary direction of thrust here, but note both directions in the chart in item "11."

- 5 a. There are a limited number of jobs in appropriate occupations.
- 5 b. There is a high unemployment among adults and out of school youth.
- 4 c. Limited resources are available to identify work stations.
- 3 d. State and federal authorities and good educational practice place restrictions on acceptable work stations.
- 4 e. Students and Advisory Committee members have had no experience in recruiting employers and may involve undesirable employers.

9. In the spaces to the left of the letters in item 7, rate the driving forces you have listed from 1 to 5 using the following scale:

1 = Has almost nothing to do with achieving change in the element.

2 = Has relatively little to do with achieving change in the element.

3 = Is of moderate importance for achieving change in the element.

4 = Is an important factor for achieving change in the element.

5 = Is a major factor for achieving change in the element.

10. In the spaces to the left of the letters in item 8, rate the restraining forces you have listed, using the following scale:

1 = Has almost nothing to do with achieving change in the element.

2 = Has relatively little to do with achieving change in the element.

3 = Is of moderate importance for achieving change in the element.

4 = Is an important factor for achieving change in the element.

5 = Is a major factor for achieving change in the element.

11. In the chart on the next page, diagram the forces driving toward change and restraining change that you rated in items 8 and 9. Use key words to identify each of the forces driving toward change (a through e). Repeat the process for forces restraining change. If there are driving and restraining forces which relate to the same change, place them in the same slot. If several forces apply to the same change, put them on the same horizontal line. If a

force applies to more than one change, repeat it for each change. "Change number" is the number of the changes noted in items 5 and 6\*.

12. For each change with forces rated "5," develop a series of strategies and tactics to increase the potency of driving forces and reduce the potency of restraining forces. Continue this process with forces rated "4," "3," "2," and "1" in order, until an appropriate strategy is developed for each. Stop when you feel that you have developed a satisfactory overall strategy and set of tactics for accomplishing the desired changes. Compare strategies and tactics across changes and eliminate possible conflicts. It may be that some proposed changes may have to be dropped as the restraining forces remain too strong to make change feasible.
  - Force 7/a, "principal and school board," could be used to "obtain additional resources for activity." (Change 5/a.) Focus their attention on the relationship between resources available and the ability to identify appropriate work stations to get more resources and agreement to divert resources from other activities, e.g. recruiting more students. Send them a proposal showing the resources needed to identify and recruit more work stations.
  - Force 7/b, "students' and Advisory Board's help," can be exploited for additional resources (5/a). They could be asked to help obtain more resources by appeals to the principal and school board and to outside sources with which they have contacts. They could also be used as a resource to identify and recruit work stations. They would require training and some supervision for this activity. Meet with each group, find what they can and want to do and use their help in the most effective way.
  - Restraining force 8/d, "limited resources," can be weakened by reallocating resources from other lower priority elements, e.g. monitoring the work place.

Possible conflicts and problems: Principal and school board may object to pressure for more resources. Students and Advisory Committee activities and commitments may not be subject to effective control after they get under way. Reducing resources for "monitoring the work place" may be a poor trade-off.

13. Describe your plans in detail.
  - a. Specify the problem to be solved or why the element is selected for improvement.
    - To identify sufficient appropriate work stations for all students who want and are eligible to participate in cooperative education. (Note how the statement of the problem has changed as a result of analysis.)

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- b. Describe the changes that will improve the element or solve the problem. Show how the changes would achieve the objective.
    - Seek additional resources for work station identification from principal and school board.
    - Accept offer of Advisory Committee to seek work stations.
    - Offer of students to help should not be accepted. It is too dangerous, e.g. students would expect that jobs they identify would be accepted and that they would be placed in them.
  - c. Describe in detail the tactics and strategy for accomplishing the changes. Explain why these should succeed and any trade-offs which may be involved. Describe resources, staff, etc. required and note how these would be obtained and used. Provide schedules, controls, etc.
    - Send memo to principal. Prepare memo for principal to school board describing the situation, documenting the need for additional resources, and describing the resources needed, what would be accomplished with them, and, if possible, how to obtain them.
  - d. Indicate possible undesirable consequences for achieving other objectives and explain any trade-offs.
    - If resources are diverted from other programs, the persons involved would be angry. If diverting from another element in your own program, the results may be counter-productive on an overall basis. Reconsider before deciding what to do.
  - e. Note possible difficulties in achieving the desired change and ways to overcome these.
    - The principal may not want to divert funds from other programs without consulting the school board and may be unwilling to make a request of the school board. Present the proposal as part of the entire educational program and emphasize the forces in addition to the principal that are pushing for an expanded program, e.g. community people who want more disadvantaged and handicapped placed and the parents of college bound students.
  - f. Build evaluation and controls into your plans so that change can be evaluated and the element further improved.
    - Indicate the date by which additional resources must be made available for them to be useful this term.

| CHANGE NUMBER<br>FORCE RATING |   | FORCES<br>FAVORING<br>CHANGE                             |  | Present equilibrium<br>FORCES<br>RESTRAINING<br>CHANGE |   | FORCE RATING<br>CHANGE NUMBER |  |
|-------------------------------|---|----------------------------------------------------------|--|--------------------------------------------------------|---|-------------------------------|--|
| 5/a                           | 5 | Principal & school board want more participation         |  | Limited resources available                            | 4 | 5/a                           |  |
|                               | 3 | Students & advisory board want to help                   |  |                                                        |   |                               |  |
| 5/b                           | 3 | Students & advisory board want to help                   |  | Students and advisory board inexperienced              | 4 | 5/b                           |  |
| 5/c                           | 2 | Marginal employers want to participate                   |  | State and federal restrictions on work station         | 3 | 5/c                           |  |
|                               | 3 | College-bound want paying jobs                           |  | Improve transition from school to work                 | 4 |                               |  |
|                               | 4 | Pressure to place disadvantaged & handicapped            |  |                                                        |   |                               |  |
| 5/d                           | 5 | Principal and school board                               |  | Limited number of jobs in occupations                  | 5 | 5/d                           |  |
|                               | 4 | Pressure to place disadvantaged                          |  | Union resistance                                       | 5 |                               |  |
|                               |   |                                                          |  | Competition                                            | 3 |                               |  |
| 5/e                           | 5 | Principal and school board                               |  | Limited resources available                            | 5 | 5/e                           |  |
|                               | 4 | Pressure to place disadvantaged & handicapped            |  | Limited resources available                            | 4 |                               |  |
|                               | 3 | College-bound want paying jobs                           |  |                                                        |   |                               |  |
| 6/a                           | 4 | Improve transition from school to work                   |  | Principal and school board                             | 5 | 6/a                           |  |
|                               | 4 | Pressure to place disadvantaged & handicapped            |  | College-bound want paying jobs                         | 3 |                               |  |
| 6/b                           | 4 | Improve transition from school to work                   |  | College-bound want paying jobs                         | 3 | 6/b                           |  |
|                               | 4 | Pressure to place disadvantaged & handicapped            |  |                                                        |   |                               |  |
| 7                             | 5 | Not enough work stations for all who want to participate |  |                                                        | 5 | 7                             |  |